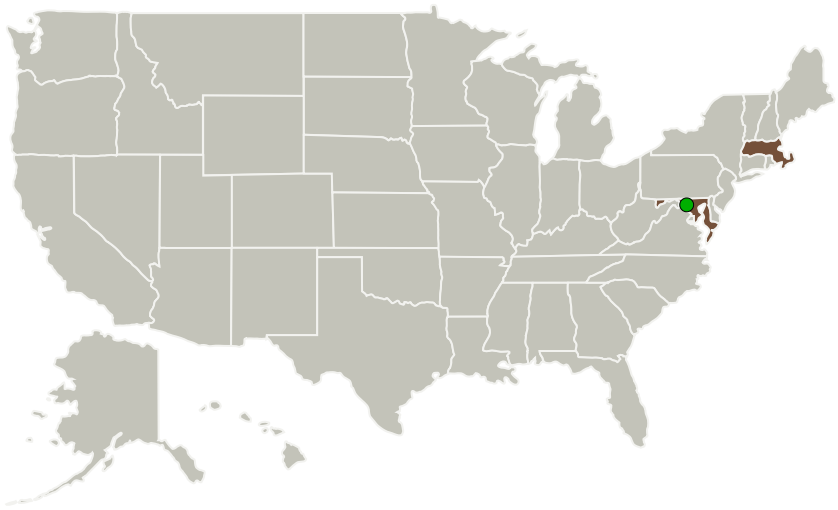
Miniature Ka-Band Automated Swath Mapper (KASM), Phase I

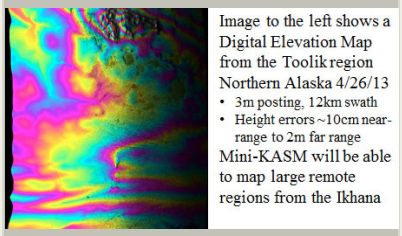
Completed Technology Project (2014 - 2014)

Project Introduction

This proposal discusses the development and demonstration of a swath-based airborne instrument suite intended as a calibration and validation with relevance to the ICESat II, SWOT and CryoSAT II missions. In particular our innovation will leverage prior NASA developments to focus on system miniaturization and increased performance. It will also support NASA's airborne science missions by utilizing long-endurance unmanned aircraft such as the Ikhana or the Global Hawk. These platforms become directly relevant due to the often remote nature of regions of interest, particularly as one considers the cryosphere. The Phase I will result in a system design that can be realized in a Phase II effort. During the Phase I, measurement requirements will be revisited and key technologies will be identified and incorporated where advantageous into a revised design. Data volume and system automation will be specifically evaluated and a plan for on-board data storage and compression/processing will be proposed. An accommodation feasibility study for the Ikhana will be evaluated. The Phase II effort will realize a prototype of this sensor. At the end of the Phase I, a technology readiness level of 3 will be achieved.

Primary U.S. Work Locations and Key Partners





Miniature Ka-band Automated Swath Mapper (KASM) Project Image

Table of Contents

Small Business Innovation Research/Small Business Tech Transfer

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Organizations Performing Work	Role	Type	Location
Remote Sensing Solutions, Inc.	Lead Organization	Industry	Barnstable, Massachusetts
Goddard Space Flight Center(GSFC)	Supporting Organization	NASA Center	Greenbelt, Maryland

Primary U.S. Work Locations	
Maryland	Massachusetts

Project Transitions

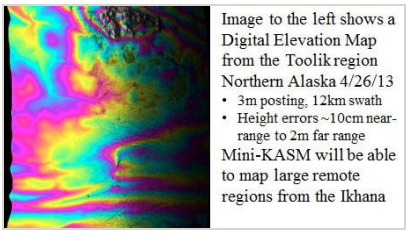
June 2014: Project Start

December 2014: Closed out

Closeout Documentation:

- Final Summary Chart*(https://techport.nasa.gov/file/137500)*

Images



Project Image
Miniature Ka-band Automated Swath Mapper (KASM) Project Image
(https://techport.nasa.gov/image/135232)

Organizational Responsibility

Responsible Mission Directorate:
Space Technology Mission Directorate (STMD)

Lead Organization:
Remote Sensing Solutions, Inc.

Responsible Program:
Small Business Innovation Research/Small Business Tech Transfer

Project Management

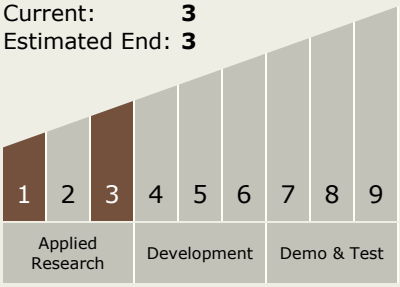
Program Director:
Jason L Kessler

Program Manager:
Carlos Torrez

Principal Investigator:
Delwyn K Moller

Technology Maturity (TRL)

Start: **1**
Current: **3**
Estimated End: **3**



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Technology Areas

Primary:

- TX08 Sensors and Instruments
  - TX08.1 Remote Sensing Instruments/Sensors
    - TX08.1.4 Microwave, Millimeter-, and Submillimeter-Waves

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System